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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,956	12/26/2006	Eric Vandevyver	292390US0PCT	1517
22850 7590 01/28/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER CHIN, HUI H	
			ART UNIT 4131	PAPER NUMBER
			NOTIFICATION DATE 01/28/2009	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/582,956	<b>Applicant(s)</b> VANDEVYVER ET AL.	
	<b>Examiner</b> HUI CHIN	<b>Art Unit</b> 4131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/12/2006, 6/18/2008</u> .                                    | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:

Paragraph [0077], "advantageously 35 composed" is not understood.

Appropriate corrections are required.

### ***Claim Rejections - 35 USC § 112***

2. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Ex parte Simpson**, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6, 8, and 13-14 are rejected under 35 U.S.C. 103(a) as obvious over Elspass et al. (US Patent 5,883,173) in view of Meschke et al. (US Patent 4,638,029).

Elspass et al. disclose a nanocomposite material made from latex comprising a layered material intercalated with a polymer (abstract).

However, Elspass et al. are silent on the drying by atomization.

Meschke et al. disclose a ceramic composition comprising a ceramic material, clay, a dispersant and a polymer binder (claim 1). Meschke et al. further disclose the slurry can be dried by atomization to improve the drying process (col. 26 lines 7-8). In light of such benefit, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the nanocomposite with an atomization drying process with the expected success.

The limitations of claim 2 can be found in Elspass et al. at col. 8, line 58, where it discloses the vinyl chloride.

The limitations of claim 3 can be found in Elspass et al. at col. 3, line 24, where it discloses the emulsion polymerization.

The limitations of claim 4 can be found in Elspass et al. at claim 1, where it discloses the smectite clay.

The limitations of claim 5 can be found in Elspass et al. at claim 1, where it discloses the surfactant.

The limitations of claim 6 can be found in Elspass et al. at Example 2, where it discloses the process.

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The limitations of claim 8 can be found in ElsPASS et al. at col. 5, lines 26-28, where it discloses the milling.

The limitations of claim 13 can be found in ElsPASS et al. at Example 5, where it discloses the suspension.

The limitations of claim 14 can be found in ElsPASS et al. at Example 6, where it discloses the material is brought to 200°C.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as obvious over ElsPASS et al. (US Patent 5,883,173) in view of Meschke et al. (US Patent 4,638,029), as applied to claims 1-6, 8, and 13-14, and further in view of Parker et al. (US 20040054059).

The disclosure of ElsPASS et al. in view of Meschke et al. is adequately set forth in paragraph 4 and is incorporated herein by reference.

However, ElsPASS et al. in view of Meschke et al. is silent on the use of the peptizing agent.

Parker et al. disclose a nanocomposite comprising an elastomer and clay (claim 1). Parker et al. further disclose the use of the peptizing agent ([0143]) to improve on dispersion. In light of such benefit, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the nanocomposite with a peptizing agent with the expected success.

6. Claims 9-11 are rejected under 35 U.S.C. 103(a) as obvious over ElsPASS et al. (US Patent 5,883,173) in view of Meschke et al. (US Patent 4,638,029).

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The disclosure of Elspass et al. and Meschke et al. is adequately set forth in paragraph 4 and is incorporated herein by reference.

However, Elspass et al. and Meschke et al. are silent on the particles size.

The relative amount will determine the properties of the mixture. The case law has held that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation”. *In re Antoine*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to achieve the relative particles size via the routine optimization process and thereby obtain the present invention.

The limitations of claim 9 can be found in Elspass et al. at claim 1, where it discloses the polymer, smectite clay, and from about 0.1 weight % to about 70 weight % of a surfactant.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as obvious over Elspass et al. (US Patent 5,883,173) in view of Meschke et al. (US Patent 4,638,029).

The disclosure of Elspass et al. and Meschke et al. is adequately set forth in paragraph 4 and is incorporated herein by reference.

However, Elspass et al. and Meschke et al. are silent on the aspect ratio of the particles.

The relative amount will determine the properties of the mixture. The case law has held that “a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation”. *In re Antoine*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to achieve the relative aspect ratio of the particles via the routine optimization process and thereby obtain the present invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUI CHIN whose telephone number is (571)270-7350. The examiner can normally be reached on Monday to Friday; 8:00am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ling-Siu Choi/  
Primary Examiner, Art Unit 1796

HC